CLAIMS

We claim:

1. A selective surveillance system for acquiring high resolution information about
one or more objects in a three dimensional space being monitored, said objects having
one or more object attributes, said system including one or more static sensors, a plurality
of variable sensors, and a computing device for controlling said static and variable
sensors, said static and variable sensors having one or more control attributes, said
system comprising:

a position detection means for selecting and uniquely identifying each object of
said one or more objects under surveillance;

a position tracking means for maintaining continuity of identity of all objects
within the three dimensional space;

a means for gathering additional information about one or more selected objects
from said variable sensors and controlling said one or more variable sensors in following
said one or more objects under surveillance by using said position information.

2. The system of claim 1, wherein the one or more objects are selected from the
group consisting of a human, an animal, an insect, a vehicle, and a moving object.

3. The system of claim 1, where the one or more object attributes are selected
from the group consisting of a color, a size, a shape, an aspect ratio, and speed.

4. The system of claim 1, wherein said static sensors are selected from the group
consisting of multi-camera tracking systems, a sound positioning system, an infrared
positioning system, a GPS, a lorad positioning system, a sonar positioning system, and a
radar.

5. The system of claim 1, wherein said variable sensors are movable in a plurality
of directions and are selected from the group consisting of a camera, a directional
microphone, an infrared sensor, a face recognition system, and an iris recognition system.

6. The system of claim 1, wherein said variable sensors are one or more cameras and said control attributes include a camera zoom measurement.

5   7. The system of claim 1, wherein said control attributes are selected from the group consisting of a pan, a zoom, and a tilt.

8. The system of claim 1, wherein the one or more object attributes are selected manually.

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9. The system of claim 1, wherein said position detection means further includes an object selection policy, wherein said object is selected according to said object attributes compatible with said object selection policy.

15   10. The system of claim 1, wherein said position detection means receives from said static sensors visual data and positional coordinates regarding said each object and assigns positional information to said each object.

11. The system of claim 1, wherein said means for gathering further include an
20   information gathering policy, wherein gathering information is achieved by selecting one or more control attributes and specifying a range of the selected control attributes.

12. The system of claim 11, wherein said means for gathering directs said plurality of variable sensors to said selected object by using position and time
25   information, wherein the position and time information is collected from the selected control attributes to control said plurality of variable sensors within the respective range.

13. A surveillance system, comprising:

30   a position detection means having one or more sets of cameras that visually monitor one or more objects that are moving in a three dimensional space, the position

detection system uniquely identifying the respective objects with object position information at a time, the objects having one or more attributes;

5 an object selection policy means for selecting one or more of the objects that have attributes compatible with an object selection policy;

one or more pan-tilt-zoom cameras capable of sensing visual information from the objects and able to point the pan-tilt-zoom camera in a plurality of directions; and

10 a positioning means for controlling the positioner to point the pan-tilt-zoom camera to the object by using the object position information and time.

14. A method for selectively monitoring movement of one or more objects in a three dimensional space, said objects having one or more object attributes, said method
15 comprising the steps of:

detecting a position of the one or more objects in said three-dimensional space by collecting information from one or more static sensors;

selecting each said detected object for monitoring;

uniquely identifying said selected object;

20 assigning one or more variable sensors to monitor said uniquely identified object;

gathering information from said variable sensors for each said identified object;

detecting a direction of each said identified object in said three dimensional space;
and

controlling said one or more variable sensors to continuously track to said
25 identified object.

15. The method of claim 14, wherein a computing device is used for controlling said static and variable sensors, said static and variable sensors having one or more control attributes.

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16. The method of claim 15, further comprising a step of selecting one or more parts of said identified object and gathering information about each selected part.

17. The method of claim 16, further comprising a step of classifying one or more of the said identified object into one or more classes and gathering information about each class, wherein the information gathering policy is different for each class.

18. A computer program device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for selectively monitoring movement of one or more objects in a three dimensional space, said objects having one or more object attributes, said method comprising the steps of:

detecting a position of the one or more objects in said three-dimensional space by collecting information from one or more static sensors;

selecting each said detected object for monitoring;

uniquely identifying said selected object;

assigning one or more variable sensors to monitor said uniquely identified object;

gathering information from said variable sensors for each said identified object;

detecting a direction of each said identified object in said three dimensional space; and

controlling said one or more variable sensors to continuously point to said identified object.

19. The computer program device of claim 18, wherein a computing device is used for controlling said static and variable sensors, said static and variable sensors having one or more control attributes.

20. The computer program device of claim 19, further comprising a step of selecting one or more parts of said identified object and gathering information about each selected part.

21. The computer program device of claim 19, further comprising a step of classifying one or more of the said identified object into one or more classes and gathering information about each class, wherein the information gathering policy is different for each class.

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